

CASE REPORT

◀ The Transpalatal Approach for Juvenile Fibroma

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JUVENILE fibroma is a specific, highly vascular, non-infiltrating, essentially benign neoplasm¹ that occurs in the nasopharynx of pubescent persons, almost always males. The term "nasopharyngeal fibroma of adolescence" has also been used to describe such¹ lesions, although the period of onset is just before puberty.

Other synonyms include juvenile nasopharyngeal fibroma, or angiofibroma; juvenile basal fibroma (basal referring to the basi-occipital site); bleeding fibroma of adolescence, and even fibroid of the nasopharynx.

INCIDENCE

Figi and Davis² reported the largest series of cases—114 observed in a 40-year period at the Mayo Clinic. Martin and co-workers⁴ reported 29 cases in a 20-year period.

PATHOLOGY

A juvenile fibroma (Figure 1) is a smooth, bulky, red, non-ulcerated tumor in the nasopharynx, readily visible by direct anterior rhinoscopy or in a nasopharyngeal mirror. Figi² expressed the opinion that the appearance is so distinctive that a physician who is familiar with the tumor might make exception to the rule that biopsy of a tumor is imperative. It is doubted, however, that he would strongly advocate such a departure.

The stroma of the tumor, as microscopically observed, is made up of fibrocytes and contains many small blood vessels. As the vessels are characteristically lacking in musculature, they have no contractibility. This is one reason for the tendency of such tumors to bleed excessively. The covering epithelium is usually that of the area of origin. Often in the typical pseudostratified, ciliated, columnar epithelium (so-called respiratory or Schneiderian epithelium) there are areas of metaplasia to squamous epithelium, stratified or even pavement in type.

CLINICAL COURSE

The usual course observed clinically begins with the symptom of nasal obstruction in a pubescent or early adolescent person. (Obviously, the tumor must grow in size for a time before obstruction becomes symptomatic.) Rhinorrhea usually is observed. Then, typically, the patient begins to have nasal hemorrhages, usually severe and difficult to control. As the tumor grows it distends the adjacent structures of the nasopharynx and nose. The facial deformity has been termed "frog-face."

Often the history includes note of attempted biopsy, or of attempted "polypectomy" based on an erroneous diagnosis, which had to be terminated because of hemorrhage.

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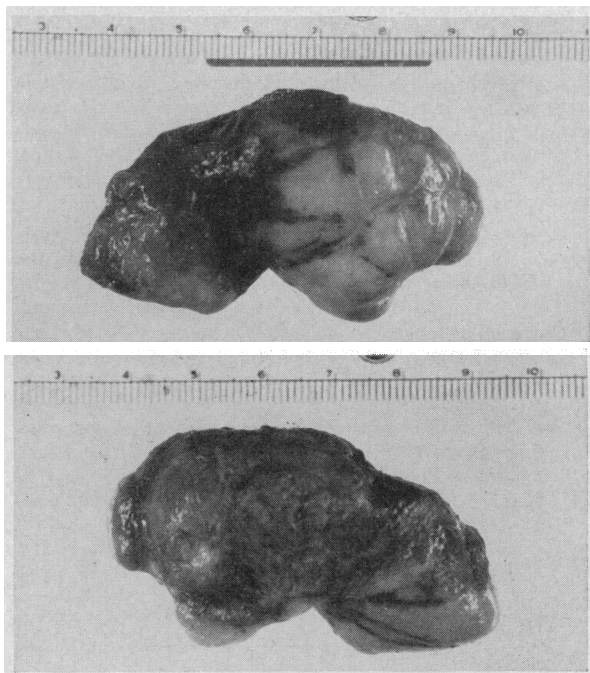


Fig. 1.—Photograph of juvenile fibroma removed from the second patient. *Upper*—the presenting (antero-inferior) surface. *Lower*—the base of the tumor.

At the time of full body growth, usually at 20 to 25 years of age, the tumor becomes smaller; but, as Figi² emphasized, the regression is not as pronounced as the literature implies.

PATHOGENESIS

The probable pathogenesis of these tumors is correlated with the clinical course. Up to the twentieth year the body of the sphenoid bone is joined to the basi-occiput (that part of the occipital bone anterior to the foramen magnum) by a plate of cartilage.⁵ The juvenile fibroma is believed to arise from the perichondrium of this cartilaginous plate. After the twentieth year, ossific union takes place between the sphenoid bone and the basi-occiput, usually over a two- or three-year period. Any spontaneous regression of the tumor, therefore, occurs at this time.

REASONS FOR TREATMENT

There are four compelling reasons for vigorous therapy in the presence of this entity, the first of which is the repeated hemorrhages. They are very severe, often necessitating multiple transfusions, and are very difficult to control. The second is the mechanical obstruction of the nasopharynx and nasal fossae, which makes the patient subject to secondary infections of the sinuses and the middle ear. The third is the facial deformity which may be a permanent disfigurement once definitely established. Finally, cases are reported of encroachment on the orbit or even intracranial extension. The larger the tumor is permitted to grow, the more difficult its removal.

REPORT OF TWO CASES

CASE 1. The patient, an 11-year-old boy, first observed in the ear, nose and throat department of the Stanford Out-patient Clinic in 1947, gave a history of nasal obstruction and repeated epistaxis during the previous ten months. A diagnosis of nasal polyp had been made elsewhere and an attempt to excise a specimen for biopsy was followed by hemorrhage. The patient was then referred to the Stanford clinic. The diagnosis was made on the basis of biopsy, and the patient was first given external radiation therapy. In the ensuing two years, he had four interstitial insertions of radon seeds. In September 1949, surgical excision was carried out, with a preliminary left external carotid ligation. The approach was made by a longitudinal, transpalatal incision, after the technique of Brown.¹ The soft palate was incised at the midline, and the incision carried forward about one and one-half centimeters into the hard palate. The exposed part of the bony palate was removed. The tumor extended into the left parapharyngeal space. It compressed, but did not enter, the left antrum. The base of the tumor was pried loose by means of a periosteal elevator. The incision was closed and healed by primary intention. When the patient was last observed in the fall of 1950, there was no sign of persistent or recurrent tumor. The nasal, nasopharyngeal, and palatal structures were anatomically normal.

CASE 2. A 15-year-old boy first observed in December 1950 was referred for treatment of a typical juvenile fibroma. The history, results of examination, and microscopic appearance of biopsy specimens previously excised were characteristic. Without preliminary radiation or carotid ligation, the tumor was removed surgically. The approach was through a transverse transpalatal incision made about one and one-half centimeters anterior to the posterior edge of the hard palate, and the exposed palatal bone and adjacent area of nasal septum was removed. The tumor was pried loose at its base by means of a periosteal elevator. Bleeding from the site of origin was stopped by thorough electrocoagulation. The incision was closed and healed primarily except at the middle where there was sloughing at the site of a suture. A small dental prosthesis was fashioned to cover this defect, and, when the patient was last observed, six months postoperatively, the fistula had spontaneously closed. There was one small nodule of apparently persistent or recurrent tumor, and this was electrocoagulated in the out-patient clinic.

SURGICAL APPROACH

Figi² expressed the opinion that the best surgical approach to such tumors is transantrally, through the maxillary sinus by a Caldwell-Luc incision, with removal of the lateral wall of the nose. By this approach, excellent exposure is obtained, but it entails permanent disruption of nasal structure. In the two cases here reported, the transpalatal approach was adequate, and the anatomical disruption was less.

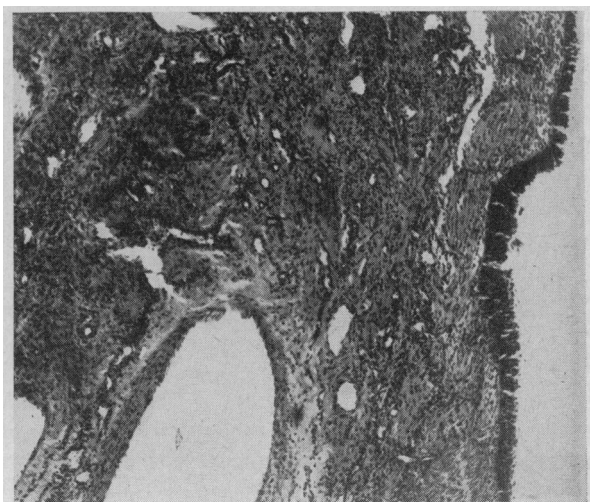


Fig. 2.—Microscopic appearance of the juvenile fibroma removed from the second patient, showing the respiratory epithelium, fibrous stroma, and the endothelial-lined capillaries and blood spaces.

OTHER THERAPY

The use of interstitial radiation in Case 1 and of surgical diathermy in Case 2 is in agreement with generally-used therapy of juvenile fibromas. Because the clinical course of the disease is related to the period of body growth, the question of using hormonal therapy is always raised. Kerwin³ recently advocated the use of androgens, and reported one case in which that treatment was given. Hormonal therapy has been previously tried and discarded by others.

SUMMARY

A transpalatal approach was used in two cases for removal of juvenile fibroma. Exposure of the operative field was adequate and the tumors were apparently successfully excised. Postoperatively the structure was essentially normal, as contrasted with the anatomic disturbance remaining after use of the transantral approach.

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